

**Remarks/Arguments**

**I. Status of the Claims:**

Claims 2 – 12 and 77 – 79 stand rejected. Claims 2, 3, 4 and 77 – 79 are presently amended.  
Claims 108 – 117 are new.

**II. Claims Amendments/New Claims:**

Claims 2, 3, 77 and 79 have been amended to include the feature “wherein said isolated *E. coli* does not contain genetic material of bacteriophage Wphi/Mu” and “wherein the *E. coli* of said composition do not contain genetic material of bacteriophage Mu/Wphi”.

Claims 108-117 are new. Claim 108 is directed to *E. coli* that include the feature “wherein said isolated *E. coli* is cured of at least one bacteriophage”. Claims 109 – 111 include the feature “wherein the at least one bacteriophage is selected from the list Wphi, Mu, T1, T2, T3, T4, T5, T6 and T7” in combination with the features set forth in claim 108. Claims 114 – 116 include the feature “herein at least a portion of the *E. coli* are rendered (chemically/electro) competent” in combination with the features set forth in claim 108.

Support for these amendments may be found at least in paragraphs 10, 28, 50, 53, 57, 60, 61, 69, 76 and in Examples 20 – 25 of the specification as filed. The amendments do not incorporate new matter, and entry thereof is respectfully requested.

**III. Rejections Under 35 USC §102:**

Claims 2 – 14, 77 and 79 stand rejected under 35 U.S.C. §102(b) as allegedly anticipated by PCT Publ. No. WO 00/78925 by Bloom, *et al.* (hereinafter “Bloom”). Applicant respectfully traverses these rejections.

Under 35 USC § 102, a claim can only be anticipated if every element in the claim is expressly or inherently disclosed in a single prior art reference. *See Kalman v. Kimberly Clark Corp.*, 713 F.2d 760,

771 (Fed. Cir. 1983), *cert. denied*, 465 U.S. 1026 (1984); *see also PPG Industries, Inc. v. Guardian Industries Corp.*, 75 F.3d 1558, 1566 (Fed. Cir. 1996) (“[t]o anticipate a claim, a reference must disclose every element of the challenged claim and enable one skilled in the art to make the anticipating subject matter”). Bloom fails to meet at least this burden.

Amended claims 2, 3, 77 and 79 include the feature “wherein said isolated *E. coli* does not contain the genetic material of bacteriophage Wphi/Mu” and “wherein the *E. coli* of said composition do not contain the genetic material of bacteriophage Mu/Wphi”.

Bloom is silent on at least the feature “*E. coli* does not contain the genetic material of bacteriophage Wphi/Mu”. Instead, Bloom teaches “*E. coli* strain W lacking endogenous plasmids” (see, e.g., page 3, line 26; *emphasis added*). Bloom further teaches “obtaining a rapid growing microorganism containing endogenous plasmids and curing the microorganism of endogenous plasmids” (see page 4, lines 17-19; *emphasis added*). Therefore, rather than disclosing *E. coli* lacking DNA from bacteriophage Wphi or Mu, Bloom discloses *E. coli* lacking endogenous plasmids. As is well known in the art, plasmids are not the same genetic entity as bacteriophages. For example Random House Unabridged Dictionary, © Random House, Inc. 2006 defines the term “bacteriophage” (also called phage) as “any of a group of viruses that infect specific bacteria, usually causing their disintegration or dissolution”, whereas the term “plasmid” is defined as “a segment of DNA independent of the chromosomes and capable of replication, occurring in bacteria and yeast: used in recombinant DNA procedures to transfer genetic material from one cell to another”. Therefore, an *E. coli* cell lacking or cured of endogenous plasmids in accordance with Bloom’s disclosure is not necessarily lacking or cured of bacteriophage, in particular bacteriophage Wphi or Mu, of which Bloom is completely silent.

The Examiner appears to argue that the instantly claimed feature “wherein said isolated *E. coli* does not contain the genetic material of bacteriophage Wphi/Mu” is inherent in the teachings of Bloom because “Bloom et al., teach rapidly growing *E. coli* strain W that lacks endogenous plasmids, and teaches strains BRL3781, BRL3784 and *recA*<sup>-</sup> derivatives”. The Examiner then states:

“It is noted that the instant specification at page 4, para. [0010], states that *E. coli* strain W does not contain the genetic material of bacteriophage Wphi and/or does not contain the genetic material of bacteriophage Mu and/or is resistant to infection, thereby teaching strain W inherently does not contain any detectable levels of bacteriophage genetic material from the Wphi or Mu bacteriophage and is resistant to infection by the bacteriophages.” (Office action,

page 4, last paragraph).

Applicant respectfully submits that the above statement mischaracterizes an important portion of Applicant's disclosure. First, the cited passage (namely, page 4, paragraph 10) does not appear in the BACKGROUND section, but rather in the "SUMMARY OF THE INVENTION" section of Applicant's disclosure. As such, this section sets forth and describes at least a portion of Applicant's inventive concept. It is improper to use a portion of Applicant's inventive concept to form the basis of an anticipation rejection, especially when the particular feature relied upon does not appear in the primary prior art reference. Second, the Examiner's reading of the cited section completely mischaracterizes the teachings set forth therein. The passage in fact does not teach that *E. coli* strain W inherently lacks DNA from bacteriophage Wphi or Mu. Instead, it recites:

"The invention includes rapid growing bacteria or microorganisms that are free of bacteriophage infection and/or resistant to such infection. For example, the invention includes rapid growing bacteria that do not contain any bacteriophage genetic material, and/or have one or more genetic markers which prevent or inhibit infection with one or more bacteriophage types or have bacteriophage resistant phenotype. The invention also includes rapid growing bacteria or microorganisms that do not contain the genetic material of one or more specified bacteriophage types and/or have been modified or mutated to prevent or inhibit infection with one or more bacteriophage types. In one embodiment, the invention includes *E. coli* strain W that does not contain the genetic material of bacteriophage Wphi and/or does not contain the genetic material of bacteriophage Mu and/or is resistant to infection with T1 phage". (Paragraph 10, specification as filed; *emphasis added*).

Therefore, the Examiner appears to be using Applicant's own inventive concept to argue that Bloom inherently discloses the instantly claimed features "wherein said isolated *E. coli* does not contain the genetic material of bacteriophage Wphi/Mu", which it does not.

Moreover, on page 6 of the Office action, the Examiner states "contrary to applicants' assertions, the disclosed W strain of *E. coli* is known to be resistant to infection by bacteriophages Wphi or Mu". Applicant disagrees with this assertion. Apart from referencing Applicant's own inventive concept, no reference has been provided to corroborate such an assertion. The Examiner has not presented any reference and Bloom is completely silent with regard to this feature.

In light of the above, Applicant submits that Bloom fails to teach or suggest the combination of features set forth in claims 2 – 12 and 77 – 79, and respectfully requests that the rejections thereof under 35 USC §102(b) be removed.

**IV. Rejections Under 35 USC §112:**

Claim 78 stands rejected under 35 USC §112, second paragraph as allegedly indefinite. Applicant respectfully traverses this rejection.

Nevertheless, without acquiescing to the Examiner's argument, and for the sole purpose of advancing the case, Applicant has amended the language of claim 78 for clarification. Amended claims 78 includes the feature "wherein the isolated E. coli of said composition is a derivative of JDP674". The meaning of the term "derivative", in the context of a specified microorganism, is clearly defined in the specification as filed, and can be found at least in paragraph 28 thereof, which states in part:

"[A] 'derivative' of a specified microorganism is a progeny of the specified microorganism, a modified or mutated microorganism obtained or derived from the specified microorganism or its progeny, or other recipient microorganism that contains genetic material obtained directly or indirectly from the specified microorganism. Such a derivative microorganism may, for example, be formed by removing genetic material from a specified microorganism and subsequently introducing it into another microorganism (i.e., the progeny or other recipient microorganism) by any conventional methodology including, but not limited to, transformation, conjugation, electroporation, transduction and the like. A derivative may be formed by introducing one or more mutations or modifications into the genome or other genetic material (e.g. vectors, plasmids, extrachromosomal elements, etc.) of a microorganism. Such mutations or modifications may include one or more insertion mutations, deletion mutations and/or substitutions or various combinations thereof. The mutations or modifications may be insertions into the genome or other genetic material (e.g. vectors, plasmids, extrachromosomal elements, etc.) of the microorganism. Alternatively, the mutations may be deletions of one or more bases and/or nucleic acid sequences from the genome or other genetic material (e.g. vectors, plasmids, extrachromosomal elements, etc.) of the microorganism. In some instances, the mutations may be the alteration of one or more bases in the genome of the microorganism. Such modifications or mutations may also comprise substituting one or more nucleic acid bases and/or nucleic acid molecules for other nucleic acid molecules and/or bases. In addition, one microorganism is a derivative of a parent microorganism if it contains the genome of the parent microorganism but does not contain some or all of the same extrachromosomal nucleic acid molecules. Thus, a strain produced by curing some or all of the endogenous vectors from a parent strain is a derivative of the parent strain..." (see, e.g., pages 10-11 of specification as filed).

Accordingly, Applicant submits that the meaning of the phrase “a derivative of JDP674” in the context of the instant claims would be readily apparent to one skilled in the art. With regard to the Examiner’s assertion that “the specification does not teach how to make progeny from JDP674” Applicant submits that the skilled artisan is well aware of how to make progeny of JDP674, since the bacterium reproduces by simple binary fission and therefore progeny are produce under normal culturing conditions.

In light of the above, Applicant submits that amended claim 78 is complies with the requirements of 35 USC §112, second paragraph, and respectfully requests that the rejections thereof on these grounds be removed.

**CONCLUSION**

Applicant hereby respectfully petitions under 37 C.F.R. § 1.136(a) a three (3)-month extension of time for submission of this response and submits the required extension fee via electronic filing. Any additional fees (including but not limited to appropriate petition fees or fees for net addition of claims) are hereby authorized to be charged to our **Deposit Account No. 50-3994**, from which the undersigned is authorized to draw funds.

Respectfully submitted,

/Jonathan P. Aumais/

Jonathan P. Aumais, Ph.D.  
Limited Recognition No. L0431  
Agent for Applicant  
(760) 476-6271

**INVITROGEN CORP.**  
Intellectual Property Department  
1600 Faraday Ave.  
Carlsbad, CA 92008

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